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Gulf Coast Computing

Your Gulf Coast Personal Computing Journal

March 1995 Issue

In This Issue:

**\$1,000,000 Internet Reward
Father of Fractals Honored
Computer History Crossword**



War of the Dragons: US Copyright VS Chinese Intellectual Property Piracy

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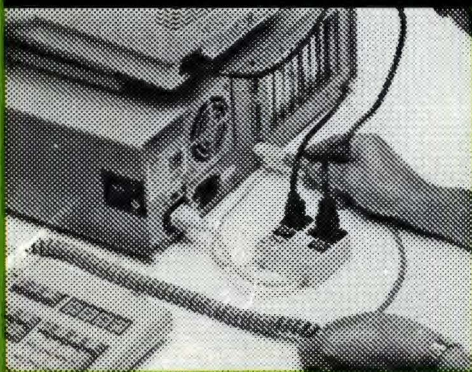
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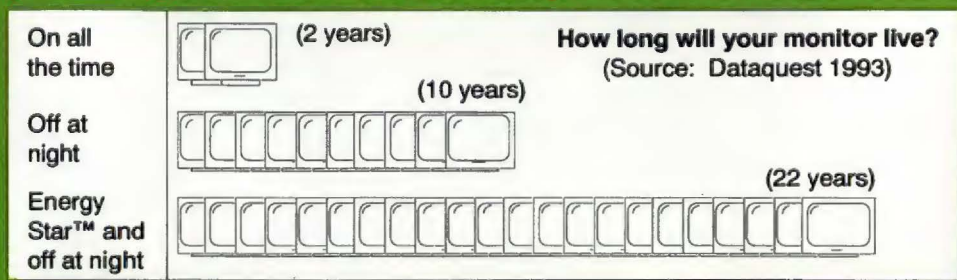
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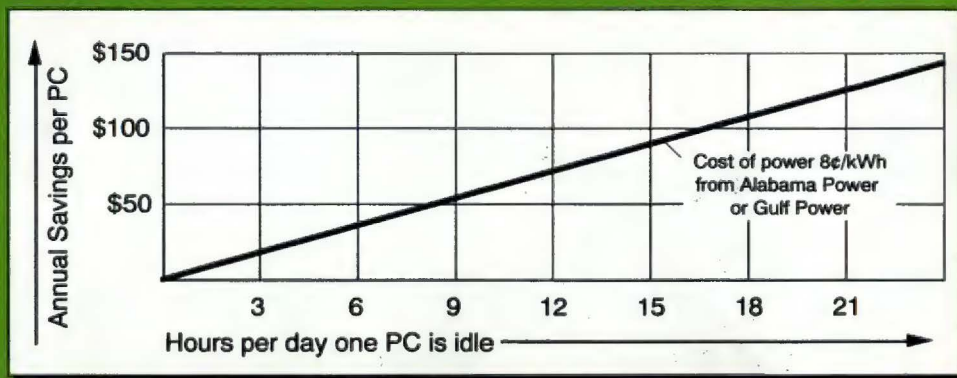


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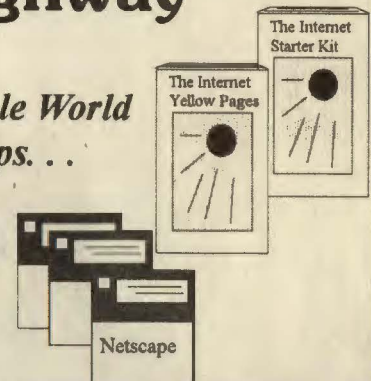


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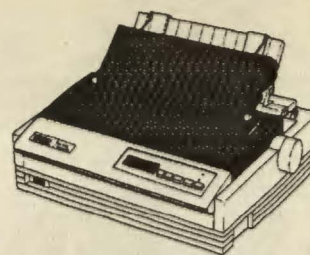
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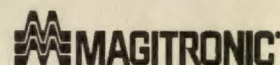
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ROM WITH A VIEW

I cannot remember a time in the last 15 years, when I have not been excited about computers and computing. The first TRS-80 I ever owned had the princely amount of 4K (not Megabytes, but Kilobytes) of memory and my first pitiful attempt at writing in BASIC managed to net me a playable *Dungeons and Dragons*™ game. I went ballistic and sequestered myself in my apartment for two weeks playing and refining this 3.9999K of BASIC. Bill Gates would have been proud (if it had been his BASIC).

The first column I ever wrote for a computer magazine was published under the guidance of the great and forward thinking publishing genius, Wayne Green. It appeared in *80 Microcomputing Magazine* and reviewed an obscure piece of software that did something that got me excited. My friends and I celebrated this modest success with a seafood excursion to Boston that left me so limp that Reese Fowler had to drive most of the way home back to our New Hampshire valley.

The first software program I ever sold was *Lost Dutchman's Gold*, written by my good friend Terry Kepner under the Pen-name Terri Li. We celebrated the sale of 200 cassettes of that BASIC language Adventure Program, which was one of the pioneer algorithms that set the stage for *DOOM*, by putting 32k of Ram in a brand new TRS-80 expansion interface. Installation performed by Keven Cohan who was killed a few weeks later in a tragic auto accident. Technical supervision performed by T'Pring the Cat (then a kitten).

Those were exciting times then. I was witness to and a participant in the struggle to create a magazine industry to support the (hobby) computer industry. Who knew that it would blossom into a trillion dollar commerce with world-wide ramifications resulting from every new technical innovation.

Wayne Green did. And he never flinched when he told somebody about it either. The tiny town of Peterborough, New Hampshire exploded with population attracted by Wayne's vision. There has always been a Wayne Green Alumni Association, membership available only to those of us who were tested in the fire of Instant Software, Kilobaud Magazine, Hot CoCo, and a dozen other titles that forged the foundation of the industry that formed the industry.

As new computers came and went, the list seemed endless -- Adam, Spectrum, Tandy, Timex-Sinclair, Dragon-Tano, PET, BBC -- to name a few. Wayne wrote about them all. He cursed a few and blessed a few and never flinched from the truth as he saw it.

Wayne Green doesn't write much about computers these days. Pioneers always pay a heavy debt load when they innovate, and Wayne has no voice left with which to speak to the computer industry. Only *73 Magazine* for Amateur Radio remains of his empire. Way back in 1980, when he gave me my first six inches of white space, he never thought I'd amount to much. But he bet a couple of chips on me anyhow. Now here I am publishing *Gulf Coast Computing*.

I have plenty of reason to be excited about publishing *Gulf Coast Computing*. I have the best audience anywhere, a better mix than I could find in a national forum. So much is happening on the Internet and in the industry that even Wayne Green must be getting wound up again. Half of it he predicted, the other half he initialized.

Thanks, Wayne. Great persons should be acknowledged before they die, not as an afterthought during their funerals. As a thinker, a publisher, a futurist and a pioneer, you rank with the best. And if everything you predicted comes to pass, I'll have a lot to be excited about in my future.

Bob Liddil
Publisher



Gulf Coast Computing

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Gulf Coast Computing Magazine

Dedicated to the memory of Barbara Briant King, who always reached for the pinnacle of excellence

FBI Seeks Maniac Bomber

\$1,000,000 Reward Offered On Internet

Written by Bob Liddil

On a cold December day, 1994, an New York City advertising executive opened a package addressed to him as being from a fictitious professor at San Francisco State University. It exploded violently. Thomas Mosser became the 15th known victim of what the FBI calls the UNABOM Killer. His cold blooded, senseless crimes have shocked the nation and prompted the FBI to take the unusual step of creating a WorldWideWeb page on the Internet, offering one million dollars reward exclusively for the purpose of apprehending this public enemy.

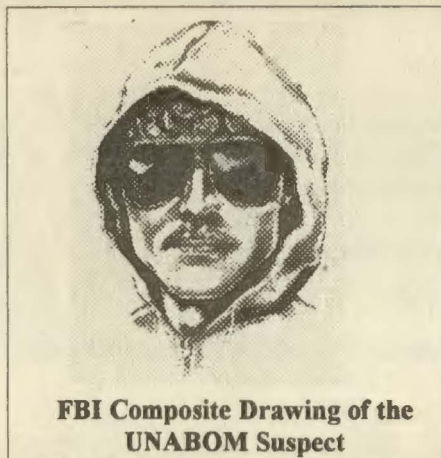
UNABOM's reign of terror began in Evanston, Illinois, on the campus of Northwestern University. A package was found in the Engineering Department parking lot at the Chicago Circle Campus of the University of Illinois. The package was addressed to an Engineering Professor at Rensselaer Polytechnic Institute in Troy, New York. It had a return address of a professor at Northwestern's Technological Institute. When the package was returned to the "addresser," that individual turned it over to campus police. He had not sent the package. On May 26, 1978, the parcel was opened by a police officer. It exploded, causing him minor injuries. UNABOM had begun.

On May 9, 1979, a graduate student on the same Northwestern Campus opened a disguised explosive device. It exploded, causing him minor injuries.

On November 15, 1979 a bomb, disguised as a parcel was mailed from Chicago to an unknown destination. It detonated in the baggage compartment of an airplane, forcing it to make an emergency landing. Twelve persons were treated for smoke inhalation

from the resulting fire. The wrapping was obliterated in the explosion so that no sender or receiver could be determined.

On June 10, 1980 an airline executive was injured in a bomb explosion. The device was mailed to him at his home, in Lake Forest, Illinois. For the first time, the bomber began to reveal something about himself. In addition to being tech-oriented enough to build explosive devices, he was



experienced enough in non-academic research to have been able to track down the executive,

At the University of Utah, Salt Lake City, Oct 8, 1981, after more than a year of silence, UNABOM struck again. This time, the explosive device was found in a pre-detonation state and was rendered safe by bomb squad personnel.

In the spring of 1982, a wooden box containing a pipe bomb exploded at Vanderbilt University. The explosion injured a secretary in the computer sciences department. The package had been initially mailed from Provo, Utah on April 23, 1982 and addressed to Pennsylvania State University, then forwarded to Vanderbilt.

Three months later a pipe bomb exploded in a coffee break room at the

University of California at Berkeley, injuring a professor of Electrical Engineering and Computer Science.

At this point, UNABOM slacked off for a period of almost three years. Then, in May, 1985, he struck again. A parcel bomb was rendered safe at Boeing Company, Fabrication Division.

Almost simultaneous to the Boeing bomb, a device detonated at Corey Hall at Berkeley, severely maiming a graduate student. This device was not mailed but was believed to have been placed by the bomber.

In November 1985 a textbook sized package injured a research assistant but left the Professor uninjured. The bomb was mailed from Salt Lake City.

In Sacramento, a computer rental store owner, Hugh Scranton was killed when an explosive device sent shrapnel through his chest and heart.

Two years later a nearly identical device, disguised as a road hazard was left at the rear entrance to CAMM'S Inc. A computer store in Salt Lake City. It exploded, injuring the owner when he attempted to pick it up.

In Tiburon, California on June 22, 1983, a very well known geneticist was severely injured by an exploding package. It had been mailed from Sacramento.

On June 24, 1993, a professor/computer scientist at Yale was also severely injured by a package mailed from Sacramento.

On December 10, 1994, Mr. Thomas Mosser became UNABOM's 15th victim.

If any reader has information concerning UNABOM they may contact the FBI UNIBOM Task Force at 1-800-701-BOMB.

To get the FBI Using: World Wide Web at the prompt type <http://niac.nasa.gov.fbi/>

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Mandlebrot Receives Honda Prize

The 1994 Honda Prize was presented recently in Tokyo to Benoit B. Mandelbrot, IBM Fellow Emeritus at the IBM Research Division's Thomas J. Watson Research Center and Abraham Robinson Adjunct Professor of Mathematical Sciences at Yale University. Dr. Mandelbrot, best known as the founder of fractal geometry, was cited by the Honda Foundation "for contributing to the establishment of a harmony between mathematics and science and culture and the environment that surrounds human activities, and to a better understanding worldwide of science and for new tools to solve the problems induced by modern progress."

The prize was conferred at a ceremony in the Hotel Okura and was followed by a commemorative lecture by Dr. Mandelbrot and a reception. Dr. Norihisa Suzuki, Director of the IBM Tokyo Research Laboratory, was in attendance on behalf of the IBM Corporation.

According to the Honda Foundation, Dr. Mandelbrot "has brought geometric shapes to a new level of science, providing us with an idea that goes beyond the traditional differential analysis, the primary mathematical problem-solving tool utilized since the advent of Newtonian dynamics. Furthermore, the fractal theory has had a tangible impact not only on natural sciences but also on such areas as social sciences and art. It is an extremely viable means of bringing social activities, nature and sciences closer together."

Mandelbrot's fractal geometry provides a mathematical description of many of the complex shapes and irregular phenomena found in nature. Coastlines, mountains and clouds can-

not be described by traditional, Euclidean geometry. But those shapes do often possess the remarkable property of self-similarity: they remain unchanged under varying degrees of magnification. Fractal geometry quantifies that property.

Phenomena such as the distribution of galaxies in the universe, the geometrical structure of turbulent fluids, and price fluctuations in financial markets have all been successfully analyzed using the mathematics of fractals. The beauty of fractals has even led to applications of fractal geometry outside of science by visual artists, designers, movie makers, and musicians.

The Honda Prize, awarded annually since 1980 to an individual or an institution, was established to promote the concept of "Eco-Technology," which "combines ecology and technology to bring about harmony between human activities and the overall environment." The Honda Foundation carries out a variety of activities in support of that concept. The prize consists of an honorary certificate, a medal, and 10 million yen.

Who Is Dr. Benoit B. Mandelbrot?

The great mathematician, physicist and writer Henri Poincare once drew a distinction between the problems that a scientist poses and the problems that pose themselves. The work of early "natural philosophers" addressed itself to problems that nearly everyone could appreciate, see and feel. But, as mathematics, science, and technology developed, they diverged from one another, and the problems that pose themselves to the specialists became increasingly invisible

and far removed from the experience of the non-specialists. Who can see and feel a DNA molecule, a Yukawa meson, a p-adic field, or the process of combustion in a car engine?

Very few persons now alive have identified substantial bridges over the chasms that now separate mathematics, science and technology from one another and from the interests of the common man and the child. One of these few persons is Benoit B. Mandelbrot, the originator of fractal geometry, who has given us, not one but a whole collection of such bridges.

Fractal geometry begins with questions like "What is the shape of a cloud, a mountain, a coastline, or a tree?" Clouds are not spheres, mountains are not cones, coastlines are not circles, and bark is not smooth, nor does lightning travel in a straight line compared with standard geometry. Nature exhibits not simply a higher degree but an altogether different level of visual complexity. It challenges us to study forms that Euclid leaves aside as being "formless," to investigate the morphology of the "amorphous."

Having raised the question of "What is the shape of a mountain," Mandelbrot derived his response from multiple directions. He put heavy reliance on the computer, taming this instrument at an early stage of its existence to be a drawing machine. He brought back the eye into science by using it as a co-witness, next to the customary formulas, of the validity of his theories. He drew from reputedly abstract chapters of mathematics by revealing the profound simplicity of certain concepts previously judged "pathological." He revealed (with the computer's help) that a very simple formula can generate a shape that the

eye and the mind both view as utterly complex. And he revealed that "mountain forgeries" based on simple fractal formulas can be strikingly beautiful.

Using the computer and the eye, Mandelbrot revived the old mathematical topic of iteration of functions, which necessarily combines a number of distinct mathematical structures. Again, he demonstrated the creative power of simple formulas by showing how an especially simple one yields the Mandelbrot Set. He revealed beauty that strikes everyone's eye and is indissolubly linked with the beauty that can only strike the mind of the well-prepared mathematician. It seems that these two forms of beauty are two sides of a single phenomenon.

While the above-mentioned investigations have attracted the widest attention, the bulk of Mandelbrot's work has been devoted to many questions of physics that are technical but use the same methods as his works on mountains and the Mandelbrot Set. His work in physics includes very practical questions, for example, the task of quantifying the notion of roughness. But he has also studied turbulence, percolation, and fractal aggregates, and tackled major conceptual issues, such as those raised by the coexistence in nature of smoothness ruled by differential equations and of orderly roughness ruled by fractals.

Mandelbrot has shown wisdom in not wanting to create a new profession, preferring his work to remain influential in widely ranging existing fields. Therefore, his fractal geometry allowed itself to be subjected to a very exacting way to judge a field's importance: by its effects on many other ongoing investigations. By this standard, few contemporaries have been as bold and as fortunate as Mandelbrot. His life work spanning more than forty years has been harmonious and well balanced.

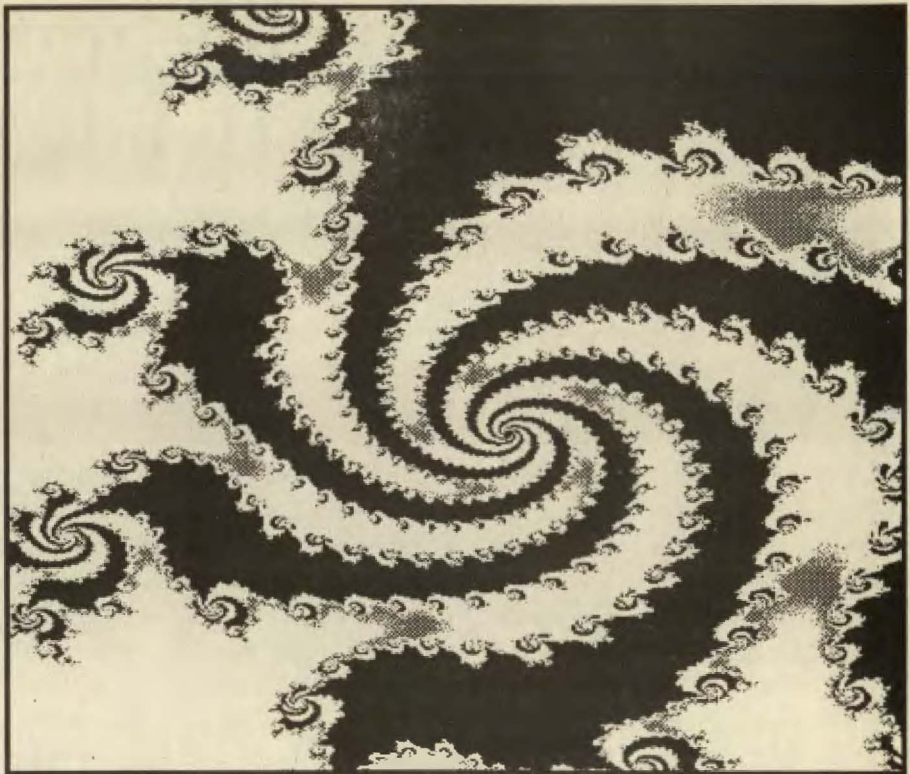


Figure 1 A Mandlebrot Fractal combines beauty and mathematics.

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let me play 'till my ears turn green.
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until I ran outta time to play.

When I die, please bury me
with a registered copy of BRE
and a modem so I can be brave
and log on from beyond the grave!

Put a modem on my son's desk
let him play against the online best
Log him on to a killing spree
and kill 'em all in BRE.

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For Trekkies, The Internet is the Penultimate Starbase

By Captain Eighty

The scene from Star Trek IV The Voyage Home is at once classical and halarious. Mr. Scott, having just been introduced to the MacIntosh work station, blithely walks over to it and says, "Computer. . ." eliciting no response. He is told that he must use the mouse, whereupon he picks up the mouse and speaks plainly into it, saying "Now, Computer..." fully expecting Majel's voice to respond.

This bit of trivia, to a trekie, is just a small part of a vast and exciting Star Trek Universe just waiting "out there" to be tapped. For purposes of this column, "out there" is The Internet.

Just in the area of newsgroups, those clustered arrays of diverse opinions, there are more Star Trek discussions going on than one human (or even a talented Borg) could read in a lifetime. Star Trek is one of the most discussed topic on the Internet, far exceeding politics, quantum physics, and alimony as well as all top-dog wannabees. Everything from the practical theory behind warp drive to Picard as a sex object in Alt.Sex.Bald Captains is fair game for the chattering keyboards of millions of Internauts, many of whom are young college students who were uncontrtemplated during the original series.

While the fate of STNG (Star Trek The Next Generation) is being be-moaned or cheered (depending on how one sees its TV cancellation) in the newsgroups, the World Wide Web is

celebrating a first of sorts. Paramount Motion Pictures has its own WWW Home Page to celebrate the arrival of

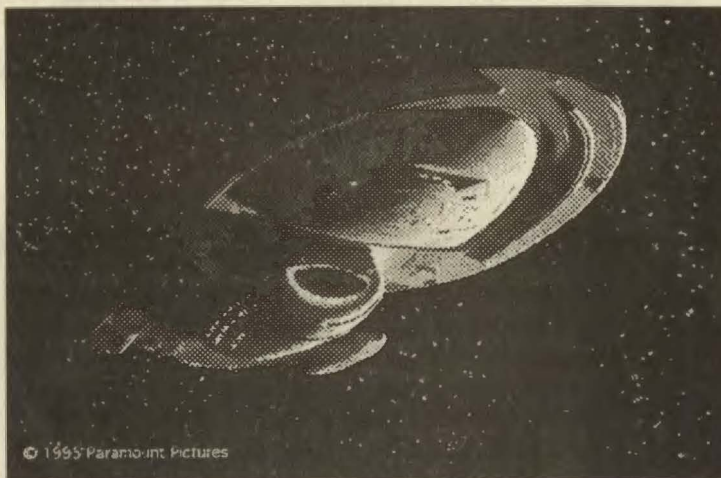


Figure 1 The new Starship Voyager

STAR TREK-VOYAGER, the fourth spin off of Gene Roddenberry's dream child after DEEP SPACE NINE, and the first one to go walkabout in a very new and different part of the galaxy.

The Paramount Home Page features considerable interactivity. The holographic Doctor from the new show greets the internet surfer enthusaiastically in audio and video clips for those so equipped, and also in standard web page hypertext.

From the multi-media PADD (an interactive "hot" console on the screen from which multiple selections can be made), the visitor to Paramount's creation can easily spend up to an hour or more exploring the mythos and realities of the new VOYAGER TV series. Biographies of crew and guests are available, as well as GIFS of sufficient quality to satisfy even the most discriminating of Klingons.

Speaking of Klingons, the slick, sophisticated Paramount page is not the only Star Trek location on the Internet by any means. For those with a tendency toward the wild side, The *Klingon Language Institute* is a home page worth visiting. Among the features available is the cyber version of *HolQeD*, a quarterly journal dedicated to Klingonese (and presumably Kingonesque as well).

Newly available is the *thhIngan-Hol* (Klingon language) mailing list, indexed and consisting of all messages posted in the calendar month in which it is retrieved.

Think sending messages in Klingonese is easy? Check out Figure 2 and guess again. But it is some trekkies' idea of a good time and who can dispute good old fashioned fun?

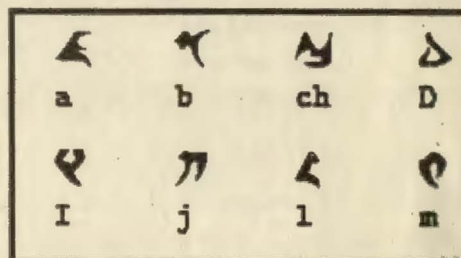


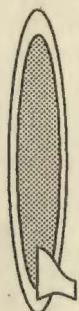
Figure 2 Just a few Klingon letters

From WebCrawler, a search device for internet users, I entered the words "Star Trek". The query "star trek" found 468 documents and returned 443. Mr. Spok would say, "Indeed!" raise one eyebrow and immediately start surfing.

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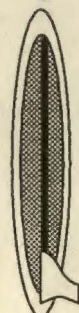
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Executive Suggests Internet is Akin to The Wild, Wild West

Mark Skapinker, president of Delrina Corporation says the Information Highway isn't for everyone.

In the opening keynote address at Comdex/Pacific Rim, Skapinker warned that the Internet is not completely reliable, and is insecure, heavily used by interest groups, disorganized, and full of sex and politics.

Banking and commerce are the areas which offer both the greatest opportunities and the most danger, because of security loopholes on the Internet.

"Perhaps, just like in the Wild West, you are best off keeping your money under your mattress," he said. shooting from the hip.

Although financial organizations do their best to secure their systems, the Internet is "hacker city," Skapinker elaborated. Last year, when one hacker broke a security code for the first time, the code-breaking solution was distributed throughout the Internet within a day.

"The outlaws have the place surrounded," and until it becomes socially unacceptable to break into Internet-based financial institutions, security will not be adequate"

Skapinker suggested that those interested in using the Internet find a reliable vendor, get good software for accessing the Internet, and be adventurous.

He extrapolated, "Some of the "hot" ideas of today, such as video-on-demand, have little long-term future." He then pointed out that one Toronto vendor who provided real video-on-demand — delivering tapes to people's homes, and picking them up later — went under, although not before discovering that the only successful portion of the business dealt with pornographic videos delivered in plain brown wrappers.

QMS Fronts Bold New High-Res Color Laser Printer

QMS Inc. of Mobile Alabama has introduced a brand new color laser printer.

The Magicolor Plus can print images at up to 600 by 600 dots-per-inch (dpi) resolution and from three to 12 pages-per-minute (ppm). It can print both black-and-white and color images on plain paper and includes color control technology and network compatibility.

QMS calls its color control technology QColor, which provides color matching support, enhanced color screening, automatic color optimization, and color customization capability for advanced users.

Enhanced color screening eliminates rosettes, moire patterns, and banding, while providing 95 line screens with over 160 gray levels, said the company. QMS also said that QColor is available for most Macintosh and Windows applications through QMS-supplied level 2 drivers.

The Magicolor Plus also uses QMS Crown CrownNet network printing technologies. QMS Crown furnishes multitasking, compile-ahead processing and user-configurable memory. CrownNet provides simultaneous network protocol support for multiple users and remote management capabilities.

The Magicolor Plus is certified by Pantone for printing representations of the Pantone color matching systems, and includes ColorSync and ICC 3.0-compliant device profiles.

Equipped with 12 megabytes (MB) of memory, the Magicolor Plus can print 600 dpi in black-and-white and 300 dpi in color, and has a suggested retail price of \$8,999. A 24MB version, which can print at 600 dpi resolution in either black-and-white or color, is also available, with a price tag of \$9,699.

CRUSH! It's a New Compression Utility From England

Atlantic Coast, the UK publishers of *PK-Zip*, the famous PC shareware compression package, has announced the availability of *Crush*, a *PK-Zip* utility for PC users that compresses Zip-ped files still further, typically squeezing them down to 12 percent less data volume more than using *PK-Zip* on its own.

Crush and its decompression opposite, *Uncrush*, has been designed to interface directly with *PK-Zip*. According to Atlantic Coast, the package is simple to install and easy to use.

Crush uses wildcards and, like many of the *PK-Zip* shells around, allows for searching of sub-directories and path names for files. The package is claimed to support path name storage within the file naming system, but without using large quantities of disk space.

Crush can be set up to "kick in" only when certain levels of further compression are possible, such as five or 10 percent, over and above the basic *PK-Zip* compression system. The package is billed as "ideal for archiving applications."

A single copy of *Crush* costs 18 Pounds in the UK (plus shipping) from Atlantic Coast. Multi-user packs are also available, along with an unlimited distribution license for third-party applications companies, at 60 pounds. A 30-station workstation license, meanwhile, which is aimed at corporations, costs 90 pounds.

Interested persons can contact Steve Gold at Atlantic Coast by dialing 0-11- 44-1297-552222 or Fax # 011- 44-1297-553366.

Steve is also available on the Internet. Drop him a message to 70007.4727@compuserve.com.

Don't be surprised if *Crush* shows up on new computers soon.

Hacker: Good Guy, Bad Guy Or Misunderstood?

You've seen it in a hundred newspapers and books, heard it in the movies. In your mind, it has come to symbolize all that is wrong and beyond the law about computers. But, according to MIT hacker Phil Agre, the words "Hack" and "Hacker" are grossly misunderstood.

"In fact," Agre postulates, " 'Hack' has only one meaning, an extremely subtle and profound one which defies articulation."

Agre's opinion is shared by computer insiders. To this elite group, Hacking might be characterized as 'an appropriate application of ingenuity'. Whether the result is a quick-and-dirty patchwork job or a carefully crafted work of art, you have to admire the cleverness that went into it.

An important secondary meaning of "HACK" is that of "a creative practical joke". This kind of hack is easier to explain to non-hackers than the programming kind. Here are some examples of pure practical jokes that illustrate the hacking spirit.

In 1961, students from Caltech (California Institute of Technology, in Pasadena) hacked the Rose Bowl football game. One student posed as a reporter and 'interviewed' the director of the University of Washington card stunts (such stunts involve people in the stands who hold up colored cards to make pictures). He learned exactly how the stunts were operated, and also that the director would be out to dinner later.

While the director was eating, the students (who called themselves the 'Fiendish Fourteen') picked a lock and stole a blank direction sheet for the card stunts. They then had a printer run off 2300 copies of the blank. The next day they picked the lock again and stole the master plans for the stunts — large sheets of graph paper colored in with the stunt pictures. Using these as a guide, they made new instructions for three of the stunts on the duplicated blanks. Finally, they broke in once more, replacing the stolen master plans and substituting the stack of diddled instruction sheets for the original set.

The result was that three of the pictures were totally different. Instead of 'WASHINGTON', the word "CALTECH" was flashed. Another stunt

showed the word 'HUSKIES', the Washington nickname, but spelled it backwards. And what was supposed to have been a picture of a husky instead showed a beaver. (Both Caltech and MIT use the beaver — nature's engineer — as a mascot.)

After the game, the Washington faculty athletic representative said: "Some thought it ingenious; others were indignant." The Washington student body president remarked: "No hard feelings, but at the time it was unbelievable. We were amazed."

This is now considered a classic hack, particularly because revising the direction sheets constituted a form of programming.

On November 20, 1982, MIT hacked the Harvard-Yale football game. Just after Harvard's second touchdown against Yale, in the first quarter, a small black ball popped up out of the ground at the 40-yard line, and grew bigger, and bigger, and bigger. The letters 'MIT' appeared all over the ball. As the players and officials stood around gawking, the ball grew to six feet in diameter and then burst with a bang and a cloud of white smoke.

The "Boston Globe" later reported: "If you want to know the truth, MIT won The Game."

The prank had taken weeks of careful planning by members of MIT's Delta Kappa Epsilon fraternity. The device consisted of a weather balloon, a hydraulic ram powered by Freon gas to lift it out of the ground, and a vacuum-cleaner motor to inflate it. They made eight separate expeditions to Harvard Stadium between 1 and 5 A.M., locating an unused 110-volt circuit in the stadium and running buried wires from the stadium circuit to the 40-yard line, where they buried the balloon device. When the time came to activate the device, two fraternity members had merely to flip a circuit breaker and push a plug into an outlet.

This stunt had all the earmarks of a perfect hack: surprise, publicity, the ingenious use of technology, safety, and harmlessness. The use of manual control allowed the prank to be timed so as not to disrupt the game (it was set off between plays, so the outcome of the game would not be unduly affected). The perpetrators

had even thoughtfully attached a note to the balloon explaining that the device was not dangerous and contained no explosives.

Harvard president Derek Bok commented: "They have an awful lot of clever people down there at MIT, and they did it again." President Paul E. Gray of MIT said: "There is absolutely no truth to the rumor that I had anything to do with it, but I wish there were."

The hacks above are verifiable history; they can be proved to have happened. Many other classic-hack stories from MIT and elsewhere, though retold as history, have the characteristics of what Jan Brunvand has called 'urban folklore'. Perhaps the best known of these is the legend of the infamous trolley-car hack, an alleged incident in which engineering students are said to have welded a trolley car to its tracks with thermite. Numerous versions of this have been recorded from the 1940s to the present, most set at MIT but at least one very detailed version set at CMU.

Brian Leibowitz has researched MIT hacks both real and mythical extensively; the interested reader is referred to his delightful pictorial compendium "The Journal of the Institute for Hacks, Tomfoolery, and Pranks" (ISBN 0-917027-03-5).

What is more familiar to most computer users in defining the word "Hack" is the computer prank, break-in or modification. Before microcomputers or access to computers by the general public, there were the elite group of programmers who operated the nation's sophisticated machines, and not always to the satisfaction of everyone.

Back in the mid-1970s, several of the system support staff at Motorola discovered a relatively simple way to crack system security on the Xerox CP-V time-sharing system. Through a simple programming strategy, it was possible for a user program to trick the system into running a portion of the program in 'master mode' (supervisor state), in which memory protection does not apply. The program could then poke a large value into its 'privilege level' byte (normally write-protected) and could then proceed to bypass all levels of security within the file-management system, patch the sys-

tem monitor, and do numerous other interesting things. In short, the barn door was wide open.

Motorola quite properly reported this problem to Xerox via an official 'level 1 SIDR' (a bug report with an intended urgency of 'needs to be fixed yesterday'). Because the text of each SIDR was entered into a database that could be viewed by quite a number of people, Motorola followed the approved procedure: they simply reported the problem as 'Security SIDR', and attached all of the necessary documentation, ways-to-reproduce, etc.

The CP-V people at Xerox sat on their thumbs; they either didn't realize the severity of the problem, or didn't assign the necessary operating-system-staff resources to develop and distribute an official patch.

Months passed. The Motorola guys pestered their Xerox field-support rep, to no avail. Finally they decided to take direct action, to demonstrate to Xerox management just how easily the system could be cracked and just how thoroughly the security safeguards could be subverted.

They dug around in the operating-system listings and devised a thoroughly

devilish set of patches. These patches were then incorporated into a pair of programs called 'Robin Hood' and 'Friar Tuck'. Robin Hood and Friar Tuck were designed to run as 'ghost jobs' (demons, in UNIX terminology); they would use the existing loophole to subvert system security, install the necessary patches, and then keep an eye on one another's statuses in order to keep the system operator (in effect, the superuser) from aborting them.

One fine day, the system operator on the main CP-V software development system in El Segundo was surprised by a number of unusual phenomena. These included tape drives would rewind and dismount their tapes in the middle of a job, disk drives would seek back and forth so rapidly that they would attempt to walk across the floor. The card-punch output device would occasionally start up of itself and punch a lace card which would usually jam in the punch. The console would print snide and insulting messages from Robin Hood to Friar Tuck, or vice versa.

The Xerox card reader had two output stackers; it could be instructed to stack into A, stack into B, or stack into A

(unless a card was unreadable, in which case the bad card was placed into stacker B). One of the patches installed by the ghosts added some code to the card-reader driver... after reading a card, it would flip over to the opposite stacker. As a result, card decks would divide themselves in half when they were read, leaving the operator to recollate them manually.

Red-faced with frustration, the operator called in the operating-system developers. They found the bandit ghost jobs running, and X'ed them... and were once again surprised. When Robin Hood was X'ed, the following sequence of events took place:

!X id1

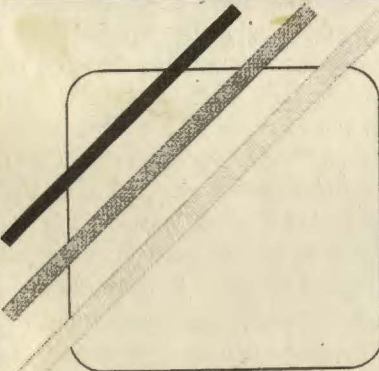
id1: Friar Tuck... I am under attack! Pray save me! id1: Off (aborted)

id2: Fear not, friend Robin! I shall rout the Sheriff of Nottingham's men!

id1: Thank you, my good fellow!

Each ghost-job would detect the fact that the other had been killed, and would start a new copy of the recently slain program within a few milliseconds. The only way to kill both ghosts was to kill them simultaneously (very difficult) or to deliberately crash the system.

Continued on page 15



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In today's electronic age, the use of personal computers is growing fast. In almost all homes and businesses you will find computers. People use them for every thing from home accounting to word processing. With each computer you usually find a printer with them. These printers can be from a dot matrix type printer using a ribbon to supply ink to a ink jet type, which sprays ink onto the paper or a laser type which works like a copying machine. The most popular and the most widely used is the dot matrix type, mainly because of cost and versatility.

You have just purchased your printer, you are printing and it is nice and dark print. A hundred pages or so later, you look down and see the print is going light, You go down to your local supply store, buy a new ribbon, you put it in and start printing. Now the print is not as sharp looking but at least it is dark again. Then, in a few hundred pages, it lightens back up.

Hold on, don't pitch that printer out the window! There are cars in the alley below! This is a common problem that I see every day and there is a reason for it.

Lets take a look at ribbon quality first. The ribbon is usually made up of two or three items. First a ribbon cassette to hold

Ribbon length plays a role as well. An average cassette may hold 2 feet of ribbon on some printers or as much as 100 yards in others.

As an interesting aside, remember that a print head is made up of tiny pins that strike the ribbon, forcing it to give up ink. If the ribbon is a loose weave and has large pores the pins hit in the middle where there is no ink, thus not printing at that spot, rendering poor or spotty ink.

A loose weave ribbon will do all sorts of bad things to your print head. It could snag on the ribbon and break off or bend one of the pins and cause you to have a print head replaced. This can be prevented by using a good heavy duty ribbon that has a close weave to it.

Then there is the ink. Not all dot matrix inks are created equal. Some are bold black and some have a gray black tint to them. It is hard to control what kind of ink you will get when you buy one. Well that's what makes a ribbon up. Lets discuss, how to buy one.

a few dozen pages. Where a good ribbon has a good quality cassette and a few yards of ribbon, it usually last a few hundred pages, Looking at the number of pages divided by the cost can prove to be shocking.

There are a few re-processors in the Pensacola area. You should check them out. Its well worth doing. First of all a re-processed ribbon is usually better than a new one, because it has more ink on the ribbon. Second, its fresh and not half dried out from sitting on a shelf. Third, its darker than the original because the ink used can either be the same type or a newer darker and richer type, and if requested it can be OCR type ink which can be picked up easier by copiers and scanners. Also most processors use a special ink for dot matrix inks that lubricate the print head and cut down on the wear on the print heads and pins. Usually a re-inked ribbon cost a fraction of the cost of a new one. What you should do is try a reinked ribbon once or twice. You will get spoiled quick. I know I did. All I have used for the past 10 years are reprocessed ribbons. If your ribbon is damaged, usually the re-processor can re pack the cassette with new ribbon, and still save you money and save our ecology.

Richard Weaver
Southeastern Computer Center
4809 N. Palafox
Pensacola, FL 32505-2907
434-2066

Editor's Note: Skip Weaver has 10 years experience in recycling printer ribbons.

Finally, the system programmers did the latter — only to find that the bandits appeared once again when the system rebooted! It turned out that these two programs had patched the boot-time OS image (the kernel file, in UNIX terms) and had added themselves to the list of programs that were to be started at boot time.

The Robin Hood and Friar Tuck ghosts were finally eradicated when the system staff rebooted the system from a clean boot-tape and reinstalled the monitor. Not long thereafter, Xerox released a patch for this problem.

It is alleged that Xerox filed a complaint with Motorola's management about the merry-prankster actions of the two employees in question. It is not recorded that any serious disciplinary action was taken against either of them.

As microcomputers leaped into the public consciousness around 1978 or '79, so did the entire idea and concept of hacking change forever in the public vocabulary.

The first hacker revolution came in the form of the "whiz kid" as typified by 14 year-old Boston student Charles Forsythe. Charlie took to programming like a duck to water, producing high

quality video games for primitive graphics systems on the TRS-80 Color Computer by punching in the (Motorola) 6809 chip code directly instead of using the slower and more often used BASIC language.

When featured on Boston's "Evening Magazine," young Charlie confessed that he wanted to "program games for a living" and that he wanted to attend MIT. He got half his wish. He graduated MIT with honors and today designs semiconductors for Texas Instruments.

Charlie was a software hacking genius, and, as were many of his peers in that first generation of kid users, totally unintimidated by the complexity of the machines. At a time when kids his age were struggling to make ten bucks mowing lawns, a typical royalty check to Charlie might have totaled more than a thousand bucks.

Charlie and his peers were arch-stereotyped in the movie "War Games" in which Matthew Broderick played a "hacker" gone too far. Broderick's character activated a computer belonging to the Strategic Air Command, beginning a game sequence entitled "Global Thermonuclear War." The rogue computer had once more run amok, this time at the

hands of a too smart kid. The result was great cinema, and an indelible alteration in the definition of the word "Hacker."

In the real world, computer bandits adopted "hacker" as their identifier. Breaking and entering vulnerable computers, loosing viruses on the world was their M/O and anarchy was their goal. "Hacker" is now a synonym for "Computer Outlaw"

But it's all a lie. The true hacker is a respecter of property, a genius-level fixer of the broken and a tinkerer with a sense of humor and an eye toward making things better.

The new incarnation of hacker is the "Internaut" or "net surfer." This intrepid individual cruises the main streets and back roads of cyberspace looking for the ultimate destination, that special "place to be."

Sooner or later he realizes that his Internet Shangra-la is a composite of all the places he's been and the things he's seen. So he acquires the necessary software, sits down and fashions his own Web Home Page on the theory that "if you build it, they will come."

So next time you see a really neat program or a great web page, what you're really seeing is a "Neat Hack" Cool?

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Keyboard "Second Skins" Are Safe And Comfortable

Written by Richard "Skip" Weaver

With the fast growing popularity of computers one of the most overlooked area is preventative maintenance. The keyboard is probably the most overlooked part of a computer and yet it is one of the most important.

Almost all of the input to a computer is by keyboard and after many hours at the computer people forget that the keyboard is a delicate item. Keyboards can fail from foreign objects getting into them.

As a repair center for computer and printers we get to see what happens to keyboards—and what we find can be astonishing. We open keyboards that have all sorts of items under the keys. In an office environment the most frequently found items are staples, paper clips, and dust. We have also found coffee, coke, and food crumbs. Home computer users tend to have food crumbs, drinks, dust, and animal fur. We have even found small bird feathers under the keys. Families with small children tend to have milk, kool-aid and cookie crumbs. Certain manufacturing companies, auto part stores and auto repair stores tend to have grease problems. The grease builds up on the keys and wears the symbols away and makes the keyboard look awful. This does not have to happen!

At your local computer stores you can purchase a keyboard

cover, commonly referred to as a keyboard skin, to help protect your investment in your computer keyboard. Some of the pre-manufactured covers are thick, heavy and customers find it hard to type using them. Now there is a place in Pensacola where custom made keyboard skins are made directly on your keyboard. They can be made to fit just about any keyboard and since they are molded directly on the keyboard they will fit perfectly. These keyboard skins can be easily removed for cleaning. As part of the process of making a skin, this company will clean your keyboard prior to shrinking a skin. The thickness of the skin can be controlled to a certain extend, and you will find they are much easier to type with than pre-manufactured skins.

These custom keyboard skins will help protect your keyboard from food, drinks, dust, and foreign objects. The usual cost is \$19.95 per keyboard skin if brought into the shop. Pickup and delivery, with a keyboard for your use while we "skin" your keyboard, is available at a slightly higher cost. It takes about 30 minutes to clean the keyboard and mold a skin. This service is available at

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Chinese Think Piracy Issue Is A Tempest In A Teapot

Even though the US and China are in furious negotiations to avert a trade war over copyright piracy, some members of the Chinese public don't see what the fuss is all about.

The United States wants China to take stronger action to stop piracy before trade is stepped up between the two countries. China has until February 4 to reach an agreement on piracy with the US. The US claims that piracy extends to 29 factories, some of them state-owned, according to the Associated Press, which are creating pirated titles. China is gearing up for a highly publicized crackdown on piracy on January 31, the Lunar New Year.

Members of the Beijing public do not want a trade war between China and US and they believe that during the past several years, trade cooperation between China and the US have been beneficial to both sides. They question whether the US's stand on piracy is reasonable. China's newspapers have played down coverage of the trade issue, relegating it to the second page.

A manager of a textile company under the Ministry of Foreign Trades

commented that her firm may be hurt first if the sanctions are applied, however, she added, "It will also inflict losses on the US. China is a huge market." She also said, "I hope that the dispute can be solved through dialogue."

Many Chinese believe that the government has made efforts in intellectual property protection. A Mr. Li of a research institute said that it is very difficult to crack down on copyright crimes. "For example," he said "the government has confiscated and destroyed so many pirated CDs, but after a few weeks, pirated CDs come out again. Not only foreign CDs but also Chinese CDs are pirated."

A college professor offered, "The government is firm in fighting piracy, however, as in any country, completely eliminating copyright violation is almost impossible."

A correspondent of Culture Newspaper made his feelings known. "I do not think it is reasonable to use copyright piracy as a pretext for a trade war." He also said, "The disputes can be solved through dialogue based on consultation and cooperation."

Meanwhile, an editorial in *China*

Infoworld proclaims, "We are surprised to see the sanction and anti-sanction plans. Businessmen feel indignant at the unreasonable accusation." The commentary argues, "The US side says that 100 percent of the software in China is pirated. How can it explain the millions of dollars of software sales by US software companies? We all know that US software companies are seeking sales representatives in China. This obviously indicates that China is a software market."

"Intellectual property protection is a policy of our government. This policy is carried for science and technology development and progress of the society, not for a particular political need."

The commentary adds, "Our policy of intellectual property protection is not to meet the requirement of any 'big' countries, nor to meet the requirement for reentry to GATT. Whether China reenters GATT or not, it does not waver in intellectual property protection."

The commentary warns, "Software piracy is a serious law violation, anyone who avails himself (herself) of loopholes to make profits must be severely punished by the law."

24-bit Digital Snapshooter Introduced In UK

Logi UK has launched the FotoMan Pixtura, a 24-bit color digital camera for PCs. The product, along with a developers' toolkit designed by Logitech, will be marketed initially to VARs (value-added resellers) and system integrators for incorporation into a wide variety of vertical applications.

According to Martin Pickering, Logi UK's general manager, FotoMan Pixtura captures more images than any other camera currently available, storing 48 high-resolution (768 by 512 pixels) or 144 standard-resolution (384 by 256) images in non-volatile memory for later downloading into the PC through the serial port.

The camera also features what Logitech claims is the longest battery life—an average of 800 to 1,000 pictures per battery set. An liquid crystal display (LCD) panel located on the back of the unit helps users keep track of important functions with a battery level indicator, picture counter, and timer.

"The possibilities for FotoMan Pixtura are limitless," Martin said, adding that the company is "continually hearing of new ways to use the camera in architecture, banking, construction, education, human resources, manufacturing, medicine, property and many other industries."

UK pricing on the camera has yet to be confirmed, but is expected to be in the UKP600-UKP700 range, following on from parallel US pricing of just under \$1,000. According to Logi, the camera reflects the results of extensive customer studies as to what features are most important to users (for example, number of pictures stored, power requirements, balance between automatic operation and user control, shape, and size).

Users can purchase an optional AC adapter for FotoMan Pixtura, as well as a variety of supplementary lenses, filters, cases, and other accessories.

News and Reviews From The National Scene

Written by Terry Kepner

A Bible for the PC World

Peachpit Press knows how to do "Bibles." Now they've taken the approach that has worked so well for "*The Macintosh Bible*" (nearly a million copies of that book are currently in print) and applied it to the PC world. The result is "*The PC Bible*," a comprehensive tome covering everything a PC user could ever possibly want/need to know about hardware and software. Like "*The Macintosh Bible*," this one is written by a pantheon of experts—in this case, PC experts—who all have the knack for writing clearly, engagingly, understandably, and often entertainingly. From what to buy and how to find it, how to use it and how to get the most out of it, "*The PC Bible*" covers it all. It's both a necessary primer and an indispensable reference that's as useful to novices as it is to experienced users.

The PC Bible is divided into twenty-five chapters: For Beginners only, which starts with unpacking your PC from the box and carries you through to a quick intro to windows; How to Buy a PC, with advice concerning speed, capacity, reliability, and suggested configurations; Mobil Computing, with notes about buying, traveling, and printing with a portable); Disk Drives, covering hard, floppy, CD-ROM, and alternatives; Monitors; Printers and Printing, not only looking at Laser, Ink Jet, Dot matrix and color, but also the pros and cons of used printers and special utilities for printers; Input Devices, keyboards, pointing devices, scanners, and such; Upgrade It Yourself, serious advice and help in upgrading an existing system; Protect Your Data, backups, viruses, security issues, and power; When Things Go Wrong, what to do when you get "Abort, Retry, Ignore" or "General Protection Fault" type problems; Health, Safety, and The Environment; Windows and DOS, reconciling the two; Fonts, a good guide to

why you should care about them; Word Processing, notes about Ami Pro, Microsoft Word, and Word Perfect; Spreadsheets, covering Excel, 1-2-3, and Quattro Pro; Presentations, what they are and programs that create them; Graphics Software, vector vs. bit-mapped, with brief looks at clip art; Desktop Publishing, what you need and how to pick it; Database Software, what it is and why bother; Communications, how to buy a fax, getting on line, e-mail addressing, fax software, and things that go wrong; Utilities, disk recovery and compression, disk defragmenting and caching, and other necessary utilities no computer should be without; About Networks, sharing software, hardware, and designing networks; Multimedia, sound hardware, desktop video, and multimedia software; Personal Finance and Tax Software, 'nuff said; and Entertainment, games, kids' stuff, where we are and where it's all going. Plus there are appendices on Tuning the Autoexec.bat and Config.Sys files, editing Windows .INI files, important DOS stuff, Batch files, and a guide to file formats.

There are books that are at least as thick as this one (950 pages) on each of the topics covered, but that isn't the point. This book is an overview, a primer to the subject. Like any book that tries to do everything, lots of information won't apply to everyone, but it is a great guide on the basics.

For someone who knows a little about computers, this book is a tremendous leg-up into the complex world of computers.

"*The PC Bible*," \$29.95, Peachpit Press, 950 pages; 7.5x9.25, ISBN 1-56609-107-1, Beginner through Advanced. IBM PC.

Word 6 for Windows Book, includes Document Templates on Disk

Want to save time learning Word 6 for Windows but don't want to plow through the rather long-winded, humorless manual? Then check out *Word*

6 for Windows Essentials, by Geoffrey Mandel (Peachpit Press, \$29.95). Bundled with a high-density floppy, the book is really two guides in one: 1) a thorough "how-to" book covering all of Word's features in half the manual; and a compendium of over 40 professionally-designed documents for business and home—available as templates on the companion disk (e.g., business letters, newsletter, press release, business card, envelope, fax, personal letters, labels and more). After reading each chapter, users can load the templates just reviewed and not only perfect their techniques and skills, but also modify the documents for personal and business use. As an extra bonus, the disk includes a variety of logos that users can adapt as their own.

Starting with a brief chapter on Word for Windows essentials, each chapter moves you further along in learning Word. First you create a letter, then format it. Next, you work with special character and paragraph formats. Then tabs, lists and tables are introduced. Page setup and printing are knocked down next, followed by working with files, styles, and templates. Gradually you work up to long documents and desktop publishing.

With hundreds of time-saving tips, tricks and shortcuts conveniently organized and indexed, the book is designed to be used, not overwhelm. Anyone upgrading to Word 6 will appreciate how features new to this version are covered in detail. While I'm familiar with Word, I still learned a lot from this book.

"*Word 6 for Windows Essentials*," Geoffrey Mandel, \$29.95, 464 pages; 7x9-inches with high-density 3.5-inch disk, ISBN 1-56609-106-3, Beginner through Intermediate. IBM PC.

Desktop Publishing in Living Color

These days it's not only graphic designers and prepress people who know the difference between spot color and colored spots. As the cost of color printing technology goes down and

ease-of-use goes up, growing numbers of home and office workers with little color experience are being called upon to produce short-run, on-demand color documents. With the proliferation of powerful new tools for desktop color production, graphic artists are increasingly being called upon to do prepress color work on their own desktops rather than in specialized shops. Although adding color to publications is now relatively easy, using color effectively still requires specialized skills. That's where "Understanding Desktop Color, Second Edition" comes in. It's the definitive, comprehensive book on desktop color that's for Macintosh as well as Windows users, for graphics professionals as well as desktop publishing novices, with more than 300 illustrations, including 24 pages in full color.

"Understanding Desktop Color, Second Edition" covers all the key issues and technologies in color publishing, beginning with the different methods by which color is modeled, both in real life and on computer. It explains how CMYK is different from Hue/Saturation/Brightness, for example, and how translating colors from one value in HSB to a CMYK value yields different results in FreeHand and Photoshop (that is FreeHand prints a pale lime green while Photoshop prints deep forest green). PageMaker and QuarkXPress similarly interpret HSB colors differently.

After Color Models and Reproduction comes Digital Halftones, Color Management, Hardware Essentials, Color Scanning (a simple process, actually—just remember to scan at twice the dpi as your finished output screen), Color Imaging, Color Drawing, Color Page Layout (including trapping), High-End Color Systems, Color Printers (very important information), and Output Service Providers.

Plus, the book discusses how all these items relate to each other and to the daily publishing demands of the workplace. The book includes a detailed index and glossary, plus appen-

dices on relevant vendors and associations.

If you must do color printing, or are involved in computer color image processing, you should buy this book.

"Understanding Desktop Color, Second Edition," Michael Kieran, \$32.95, 600 pgs., 7x9", ISBN 1-55609-164-0. Beginner to Intermediate Users. Windows, Macintosh.

A Comprehensive Guide to Keeping E-mail Private

Nobody mails a letter without sealing the envelope, but millions send E-mail and do nothing to keep it private. Now there's privacy software so powerful the government has threatened to jail its developer, and a comprehensive new book that shows exactly how to use it — "Protect Your Privacy: The PGP User's Guide."

Written by leading computer science author William Stallings, "Protect Your Privacy" is the definitive guide to Pretty Good Privacy (PGP), arguably the most powerful encryption software ever developed.

"Protect Your Privacy" explains exactly what PGP is, what it can do, and where to get it at little or no cost. It clearly explains public key encryption, and illuminates many previously-difficult concepts, including digital signatures and hash codes. It also shows how to make sure PGP messages stay secure, by obtaining trusted public keys and by choosing passphrases that won't be easily decoded if stolen. System administrators will learn exactly how to set up a PGP facility to protect every message sent within an organization.

"Protect Your Privacy: The PGP User's Guide," William Stallings, Prentice Hall, 300 pp. \$19.95, Paperback, ISBN 0-13-185596-4. Windows; DOS; Macintosh; UNIX; OS/2.

Tech Support Becomes Affordable And Convenient

The days of expensive technical support phone calls and unanswered midnight questions are over with the Certified Tech Support book series, a collaboration between Osborne/McGraw-Hill and Corporate Software Inc. Several hundred immediate answers to the most commonly asked questions about today's popular software programs can be easily accessed by readers—24 hours a day with this new series.

Unlike other computer answer books, the Certified Tech Support series is based on experience and empirical data amassed from the 350,000 support calls handled by Corporate Software monthly.

The series, with list prices of either \$16.95 or \$19.95 U.S., focuses on popular software packages, such as: DOS 6.x, Lotus Notes Release 3, 1-2-3 for Windows, WordPerfect 6.0 for Windows, Novell NetWare 3.x to 4.x, Microsoft Excel 5.0, Microsoft Access and Microsoft Word 6.0 for Windows.

Written for computer users of all levels, the Certified Tech Support series offers fast fixes and direct answers at a fraction of the cost—and time—it takes to call for support. These six new books introduce the helpful features that will be found throughout the Certified Tech Support series: The Top Ten Tech Terrors—the problems that plague people most often; Frustration Busters—tips to avoid problems in the first place; Solutions logically organized by topic; and detailed table of contents and indexes.

Easy Internet

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Continued on Page 22

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Information Superhighway Illustrated

The Information Superhighway is already taking shape, and this unique guide shows how it all works using full-color illustrations and computer graphics. Readers discover how modems work, what the Internet is all about, and what the future will bring. Explains communications processes and concepts with full-color illustrations; Covers the Internet, modems, e-mail, BBSs, viruses, online services, and more; Special investigation of the future of computer communications and the evolution of the Information Superhighway. "Information Superhighway Illustrated," Bill Eager, \$24.99, 208 pp., 8.5x11", ISBN 1-56529-892-6. Beginner to Advanced Users. Internet—All computers.

Killer dBASE for Window's

This book/disk set is the ultimate reference for advanced dBASE users seeking optimum results. Readers gain expert advice on high-level database topics and power programming techniques from dBASE masters as well as a disk full of valuable utilities and tools: Advanced information on client/server setups, SQL, corporate-grade solutions, and more; Special coverage of building multiplatform applications with dBASE for Windows; Disk contains powerful third-party utilities, tools, and the source code from the book's examples. "Killer dBASE for Window's," Michael Groh, \$49.99, 900 pp., 7 3/8 x 9 1/8", ISBN 1-56529-923-X. Intermediate to Advanced Users. Windows.

Killer Paradox 5 for Windows

For the professional database en-

gineer or programmer, this is the ideal companion for advanced results. Filled with high-level techniques, tips, tools, and utilities on disk, this book ensures users of optimal results: disks include third-party utilities and ObjectPAL code libraries with special routines; Covers client/server setups, SQL, multiple-database reports, using ObjectPAL for corporate-grade programming, and more; Collection of expert database advice from some of the masters of the Paradox world. "Killer Paradox 5 for Windows," Leon Chalnack, et al., \$49.99, Que, 100 pgs., 7 3/8 x 9 1/8, ISBN 1-56529-886-1. Intermediate to Advanced Users. Windows.

Multimedia Illustrated

This rich, full-color book is a friendly conceptual guide to the world of multimedia, filled with illustrations and other visual elements. It shows what multimedia is, how it works, how it's created, and how it will impact the future.

- Vivid full-color illustrations are accompanied by captions and facts that explain each concept
- Specific information on how computers and game systems integrate images, sounds, and video
- The best illustrated, behind-the-scenes exploration of interactive computing and how readers can create their own.

"Multimedia Illustrated," Nat Gertler, \$27.99, Que, 208 pp., 8 1/2 x 11, ISBN 1-56529-936-1. Beginning to Intermediate Users. IBM.

Que's BBS Directory

In the online world, finding the right BBS to connect to is essential. This directory helps users discover which BBS offers what they need in services, information, and membership costs. Readers learn how to get the most from their online sessions.

- Lists over 5,000 local bulletin boards across the nation
- Topical directory breaks down

the services BBSes offer, from computer support to games and entertainment

- In-depth reviews of the top 100 BBSes

"Que's BBS Directory," Marcus Pope, \$24.99, Que, 416 pp., 7 3/8 x 9 1/8, ISBN 0-7897-0018-2. Beginning to Advanced Users. IBM and Macintosh.

Que's First Look at Windows 95

This is the perfect guide for users looking for information on what the new version of Windows will offer—and what they need to upgrade. This book focuses on the features and elements of Windows 95 that will affect everyday users.

- An uncensored look at the challenges involved in upgrading from Windows 3.X
 - Reveals what users need to know about application compatibility, hardware requirements, and networking features
 - Clears up all the myths surrounding this revolutionary product
- "Que's First Look at Windows 95,"

Que Development Group, \$14.99, Que, 192 pp., 7 3/8 x 9 1/8, ISBN 0-7897-0074-3. Beginning to Intermediate Users. Windows 95.

Special Edition Using Microsoft Office 4.2 for Macintosh

Not only is this the perfect reference to Word, Excel, and PowerPoint for the Mac—it also provides invaluable information on using the programs together. Readers learn to produce integrated documents such as reports, newsletters, and presentations.

- Covers the basics of each program in step-by-step lessons
- Special section on customizing Microsoft Office with macros, VBA, and AppleScript
- Explains the most efficient ways to use Wizards, share data, use Mail, and more.

"Special Edition Using Microsoft Office 4.2 for Macintosh," Durso, Notion, Negrino, et al., \$34.99, Que, 1,000 pp., 7 3/8 x 9 1/8, ISBN 0-7897-0017-4. Intermediate to Advanced Users. Version 4.2 for Macintosh.

Unveiling Windows 95

Que's team of expert authors unveils the latest release of windows in this insider's guide! This in-depth book is perfect for everyday users, as well as system administrators who want a sneak peek at Windows 95.

- Covers the architecture and user interface aspects of the new version of Windows

- Specific information on how and when to upgrade to Windows 95

- Covers topics such as plug-and-play, 32-bit preemptive multitasking, multimedia

- OLE, networking, and more

"Unveiling Windows 95," Roger Jennings, \$24.99, QUE, 500 pp., 7 3/8 x 9 1/8, ISBN 0-7897-0061-1. Intermediate to Advanced Users. Windows 95.

Upgrading Your Mac Illustrated

For step-by-step instructions to installing Macintosh peripherals, the easy way to learn is to see how it's done. This full-color book does just that, as clear photographs show do-it-yourself readers exactly how to upgrade their Mac equipment for better performance.

- Easy directions for installing memory, hard drives, monitors, printers, modems, and more

- Straightforward, non-technical approach to a technical topic

- Special coverage of upgrading to Power Mac and adding multimedia hardware such as a CD-ROM drive

"Upgrading Your Mac Illustrated," Tom Negrino, \$24.99, QUE, 208 pp., 8 1/2 x 11, ISBN 1-56529-917-5. Beginning to Intermediate Users. Macintosh.

Epson has released a new batch of consumer-oriented notebook computers which use Cyrix processors and an innovative pointing device.

The Epson 800 series employ processors ranging from 66 to 80 MHz, and have large color screens more than 10 inches in size. Breaking from the Intel mold, Epson has put Cyrix processors inside the new machines.

All models use a track pad pointing device which replaces a mouse or trackball with a finger-sensitive pad. Users control the cursor by moving their fingers across the pad.

The screen is a 10.3-inch dual-scan passive matrix color model. It is driven by 32-bit local-bus video cir-

cuitry which can simultaneously support an external VGA display with resolution up to 1024x768 in 16 colors.

A floppy drive and a 340-mega-byte hard drive are standard. Two PCMCIA slots support a single Type III card or two Type I or Type II devices. The rechargeable nickel-metal hydride battery will power the computer for 4-6 hours. With battery pack installed, its total weight will be about 6 pounds.

The new notebook, whose street price is estimated to be about \$2,700, is expected to do extremely well in mail-order and retail outlets.



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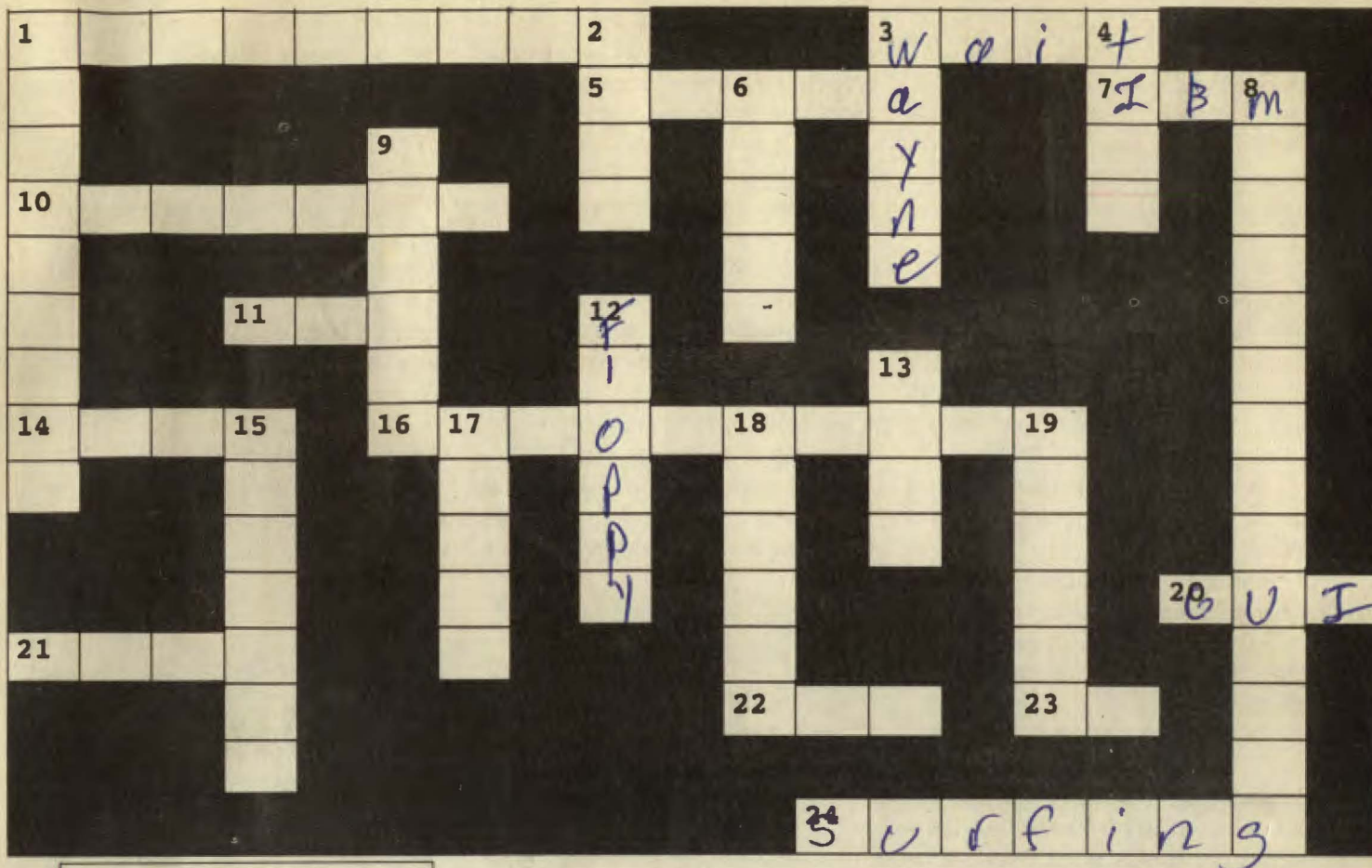
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Clues

Across

Down

- 1 Bill Gates's favorite toy
3 Zero ____ State
5 Commodore's great graphics machine
7 Big Blue
10 Digital's first ill-fated micro
11 Commodore's rival to the Trs-80
14 Steve's next computer after the Apple
16 An instant of Mork's time
20 Graphic User Interface
21 What a computer needs to be
22 Half a binary gate
23 The other half of a binary gate
24 Cruising the internet

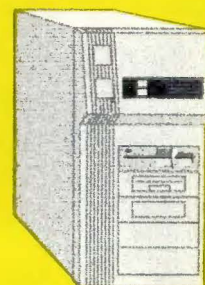
- 1 Okidata's flagship trademark
2 This New Orleans company made the US Dragon Computer
3 Mr Green, to his friends
4 The one real dimension in Cyberspace
6 ____ Inside™
8 First Trs-80 magazine, Eighty ____
9 City in which the Trs-80 debuted
12 ____ disk
13 Steve ____ was co-founder of Apple
15 TV Studio on a card, the video ____
17 Father of Micro Adventure games, Scott ____
18 Captain ____ was an early 1980's computer columnist
19 British clone of the Tandy CoCo

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